What is claimed is:

1. A variable clamp equalization method comprising the steps of:

(i) measuring optical signal to noise ratio (OSNR) values for each wavelength;

(ii) computing an OSNR range value of the measured OSNR values;

(iii) computing an OSNR average value of the measured OSNR values;

(iv) computing a raw power adjustment value for each wavelength by subtracting each wavelength's measured OSNR value from the computed OSNR average value;

(v) computing a raw power adjustment correction factor for each computed raw power adjustment value based on the computed OSNR range value in accordance with a pre-defined variable clamp value schedule, wherein a larger clamp is scheduled for use when the computed OSNR range value is larger, and a smaller clamp is scheduled for use when the computed OSNR range value is smaller;

(vi) determining a clamped power adjustment value for each wavelength by multiplying each computed raw power adjustment value by the computed raw power adjustment correction factor;

(vii) applying the corresponding determined clamped power adjustment value to each wavelength; and

(viii) iterating steps (i) through (vii) until the computed OSNR range value is within pre-defined boundaries, whereby the signal is considered equalized.

2. The method according to claim 1, wherein the raw power adjustment correction factor is computed by:

(i) determining the largest magnitude computed raw power adjustment value; and

(ii) dividing the scheduled clamp value by the determined largest magnitude computed raw power adjustment value.

3. A variable clamp equalization apparatus comprising:

(i) means for measuring optical signal to noise ratio (OSNR) values for each wavelength;

(ii) means for computing an OSNR range value of the measured OSNR values;

(iii) means for computing an OSNR average value of the measured OSNR values;

(iv) means for computing a raw power adjustment value for each wavelength by subtracting each wavelength's measured OSNR value from the computed OSNR average value;

(v) means for computing a raw power adjustment correction factor for each computed raw power adjustment value based on the computed OSNR range value in accordance with a pre-defined variable clamp value schedule, wherein a larger clamp is scheduled for use when the computed OSNR range value is larger, and a smaller clamp is scheduled for use when the computed OSNR range value is smaller;

(vi) means for determining a clamped power adjustment value for each wavelength by multiplying each computed raw power adjustment value by the computed raw power adjustment correction factor;

(vii) means for applying the corresponding determined clamped power adjustment value to each wavelength; and

(viii) means for iterating means (i) through (vii) until the computed OSNR range value is within pre-defined boundaries, whereby the signal is considered equalized.

4. The apparatus according to claim 3, wherein the raw power adjustment correction factor computing means includes:

means for determining the largest magnitude computed raw power adjustment value; and

means for dividing the scheduled clamp value by the determined largest magnitude computed raw power adjustment value;

5. A storage medium readable by a computer encoding a computer process to provide a variable clamp equalization method, the computer process

comprising:

(i) a processing portion for measuring optical signal to noise ratio (OSNR) values for each wavelength;

(ii) a processing portion for computing an OSNR range value of the measured OSNR values;

(iii) a processing portion for computing an OSNR average value of the measured OSNR values;

(iv) a processing portion for computing a raw power adjustment value for each wavelength by subtracting each wavelength's measured OSNR value from the computed OSNR average value;

(v) a processing portion for computing a raw power adjustment correction factor for each computed raw power adjustment value based on the computed OSNR range value in accordance with a pre-defined variable clamp value schedule, wherein a larger clamp is scheduled for use when the computed OSNR range value is larger, and a smaller clamp is scheduled for use when the computed OSNR range value is smaller;

(vi) a processing portion for determining a clamped power adjustment value for each wavelength by multiplying each computed raw power adjustment value by the computed raw power adjustment correction factor;

(vii) a processing portion for applying the corresponding determined clamped power adjustment value to each wavelength; and

(viii) a processing portion for iterating processing portions (i) through (vii) until the computed OSNR range value is within pre-defined boundaries, whereby the signal is considered equalized.

6. The method according to claim 5, wherein the raw power adjustment correction factor computed by including:

a processing portion for determining the largest magnitude computed raw power adjustment value; and

a processing portion for dividing the scheduled clamp value by the determined largest magnitude computed raw power adjustment value;